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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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07/31/2000

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EXAMINER

DANG, THUAN D

ART UNIT

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.



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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 09/629,482
Filing Date: July 31, 2000
Appellant(s): BROCKER ET AL.

MAILED
MAY 31 2007
GROUP 1700

Michael Byrne
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 2/23/2007 appealing from the Office action mailed 7/10/2006.

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(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

4,950,834

ARGANBRIGHT et al.

8-1990

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

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Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 11-16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 11, the “passing step” is indefinite due to the recitation of the limitation “without substantial change in the degree of the dispersion of said reaction fluid” since it is unclear the change in the degree of dispersion is applied thru the **entire** the catalyst bed or just in the connection path between the “generating zone” the reactor.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 11-16 are rejected under 35 U.S.C. 103(a) as obvious over Arganbright et al (4,950,834).

Arganbright discloses a process of reacting between propylene and benzene in the presence of a catalyst substantially the same as the applicant's claimed catalyst in an isothermal reactor having a wall contacted with the surrounding air (the abstract; the drawings; column 1, lines 8-66; col. 3, lines 1, lines 1-60; col. 5, line 14 thru col. 6, line 35).

As disclosed on column 3, line 28, benzene in the reactor is boiling (a liquid form).

Arganbright discloses that propylene is the most volatile component in the reaction (col. 8, lines 3-4. Arganbright also discloses that the reaction includes both vapor and liquid (col. 8, lines 52-55). Therefore, propylene must inherently be in the form of gas before the reaction.

On column 7, lines 24-34, Arganbright discloses that the benzene and others flow down to the bottom of the Omega sieve section to the Y sieve section. In figure 1 and 2, the examiner has recognized that gas propylene stream 1 must be dispersed into this flowing down benzene stream before the mixture of benzene and propylene reacted further in the Y sieve.

Arganbright does not disclose that (1) the mixture of benzene and propylene does not substantially change in the degree of dispersion thru the reactor (Y sieve section) and (2) using a cooling fluid medium for delivering the heat away from the reactor.

However, it is expected that the dispersion would not be change in the Y sieve section of the Arganbright process since the catalyst bed of the Arganbright reactor is made by the same material as the claimed reactor (col. 5, line 14 thru col. 6, line 55).

It is expected that the heat of the reaction will be transfer from the wall of the reactor via the surrounding air.

However, in the case that the reaction room is too hot, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the Arganbright process by employing air conditioners to cool down the room to arrive at the applicants' claimed process to avoid the reaction room is too hot.

A recycle of benzene can be found in figures.

Temperature and pressure can be found on column 8, lines 42-46.

Arganbright appears to be silent as to the superficial liquid/gas velocity. However, these parameters depend on the size of the reactor and selected conversion.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the Arganbright process by selecting appropriate velocities of gas/liquid to operate the process since it is expected that using any superficial liquid/gas velocity would yield similar results.

(10) Response to Argument

Regarding the argument of the rejection under 35 USC 112, 2nd paragraph, the examiner maintains the same position as maintained in the Advisory Action mailed on 10/27/2006. It is unclear the expression “without . . . fluid” is applied to the passing step or the flow in the reactor. Although applicants maintain that in the specification, the change of the dispersion is applied to both the feed line and through the reactor, the claim is clear on its face. The limitation of the claim must be correctly interpreted so that any difference between the prior art and the claimed process can be recognized.

The argument that there is not intentional step of generating a reaction fluid by dispersing a gas phase in a liquid phase is not persuasive since as shown in figure 1 and in the abstract, propylene gas stream 1 must be dispersed into the downstream benzene (stream 2) before the mixture benzene and propylene reacted further in Y sieve zone. Appellants also argue that as described in the specification, the dispersing step of gas phase in the liquid phase can be performed by a dispersing elements such as a liquid jet gas compressor, jet pumps for conveying and compressing gasses. However, applicants do not claim using these dispersing elements.

The argument that it is not simply the material of construction, but overall design of the reaction and catalyst which influence whether a substantial change in the degree of the dispersion of the reaction fluid occurs as it passes through the reactor is not persuasive since appellants do not claim which structure in the design make an unchanged dispersion possible. Instead, appellants claim “through a reactor whose reactor space is equipped with woven or knitted metal fabrics coated with catalyst”. This reactor equipped with these elements is indistinguishable from the one used in the Arganbright process as discussed in the above rejection and the later respond.

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The argument that no way the reference teaches or suggests the utilization of a woven or knitted metal fabric coated with a catalyst is not persuasive since Arganbright discloses everywhere from column 5, lines 14 through column 7, line 5 about how the catalyst is loaded in the reactor, namely column 6, lines 8-12; column 6, line 62 through column 7, line 1. Appellants also argue that catalyst particles are not enclosed in containers in the present invention, while the prior art discloses the catalyst are enclosed in a container. However, it does not matter if the catalyst in a container or not, it is clear that the Arganbright reactor is equipped with metal meshes coated with catalysts.

The argument that as described in the specification, in the present process, the heat transfer is provided by heat exchangers comprising a plate type heat exchanger or spiral heat exchanger is not persuasive since appellants do not claim using exchangers. Further, as understood from the law of nature, heat must be transferred from a hot region to a cooler region. Therefore, there must be a transfer of heat between the reactor and the surrounds and this heat transfer must be via the reactor wall.

The argument that claim 11 requires a step of 'separating the reaction fluid into gas phase and liquid phase'. This step must be recognized when one having ordinary skill in the art see figure 1 in which unreacted materials as a gas go out the reactor via stream 5 and cumene as a liquid flow down stream 8.

(11) Related Proceeding(s) Appendix

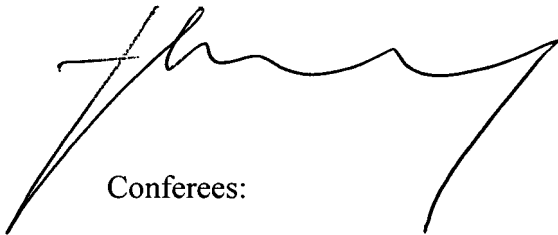
No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

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For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

Thuan D Dang



Conferees:

Glenn Caldarola



Glenn Caldarola
Supervisory Patent Examiner
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Kathryn Gorgos